

upon 11th January. Prof. Kendall and himself commenced observing it upon the night of 26th January, and continued until the middle of March. They had made about eight hundred micrometrical measurements, and the place of the comet had been compared with about one hundred fixed stars. The elements calculated by Prof. Encke agreed very closely with those Prof. K. obtained from these observations. Prof. Encke suggests that this may be the comet announced to appear in 1848. Messrs. W. and K. had also observed Mauvais' second comet on the 18th of January, and on several subsequent evenings, both with the equatorial and the meridian instruments.

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*Stated Meeting, May 16.*

Present, twenty-two members.

Dr. FRANKLIN BACHE, Vice-President, in the Chair.

Letters were announced and read:—

From Pierre de Angelis, dated Buenos Ayres, 18th February, 1845, relating to an error in the title of a pamphlet by him: and,—

From Antonio Ladislau Monteiro Baena, announcing a donation by him to the Society.

The following donations were announced:—

FOR THE LIBRARY.

Summary of the Transactions of the College of Physicians of Philadelphia. From November and December, 1844, to March, 1845. Vol. I. No. 9. 8vo.—*From the College.*

Biographical Memoirs of John C. Otto, M.D., late Vice-President of the College of Physicians; read before the College by appointment, March 4, 1845. By Isaac Parrish, M.D. Philadelphia, 1845. 8vo.—*From the same.*

Fifty-eighth Annual Report of the Regents of the University of the State of New York. Read to the Legislature, March 1, 1845. Albany, 1845. 8vo.—*From the Regents.*

The African Repository and Colonial Journal. Vol. XXI. May, 1845. No. 5. 8vo.—*From the American Colonization Society.*

Transactions of the Historical and Literary Committee of the American Philosophical Society. Vol. III. Part I. Philadelphia, 1843. 8vo. Thirty Copies.—*From Henry D. Gilpin, Esq.*

On the Anthracite and Bituminous Coal Fields in China; the System of Mining, and the Prices of Coal, and Labour in its Production, and Transportation to Peking. By Richard C. Taylor. Philadelphia, 1845. 8vo.—*From the Author.*

Journal of the Franklin Institute of the State of Pennsylvania. Third Series. Vol. IX. May, 1845. No. 5. 8vo.—*From Dr. R. M. Patterson.*

A System of Geography, Ancient and Modern. By James Playfair, D.D., F.R.S., &c. &c. In Six Volumes, with Folio Atlas. Edinburgh, 1808—1814. 4to.

An Historical and Chronological Deduction of the Origin of Commerce, from the Earliest Accounts. By Adam Anderson. In Four Volumes. London, 1801. 4to.

[The two last mentioned works were deposited in the Society's Library, some years ago, by Charles N. Bancker, Esq., who now presents them to the Society.]

On the 19th of February, 1817, the late John G. Biddle, Esq., deposited in the Library of the Society, several valuable works, a list of which is recorded in the first volume of our Transactions, New Series, page 437. These works are now presented to the Society by Mrs. Mary Biddle, the relict of the deceased.

The Committee on Mr. Lea's paper, entitled "Descriptions of New Fresh Water and Land Shells," reported in favour of its publication in the Transactions of the Society, which was ordered accordingly.

In this paper Mr. Lea observed that he had now added twenty-three new species to the already long list of the *Melania*, his last paper containing fifty-seven. He also adds six to the interesting genus *Schizostoma*, now making ten species in all, and twenty-six to the family *Naiades*. He gives an alphabetic list of all the described species of the genus *Melania*, making three hundred and eighty in

number. In regard to his own species, he says he is aware of the extreme difficulty of severation, arising from the fact of the existence of the vast number of species now described, and their consequent inosculation; but that he has endeavoured, by careful examination, to satisfy himself that their characteristics were persistent.

The following are descriptions of the new species embraced in this paper:—

*Unio compressissimus.* Testâ lævi, subtriangulari, valdè compressâ; valvulis crassis; natibus compressis; epidermide . . . ; dentibus cardinalibus parvis, crenulatis; lateralibus magnis, crassis curvisque; margaritâ albâ. *Hab.* Holston River, Tenn.—*President Estabrook.*

*Unio pellucidus.* Testâ lævi, obovatâ, subcompressâ, pellucidâ; valvulis tenuibus; natibus prominulis, ad apices undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, compressis erectisque; lateralibus longis, rectis lamellatisque; margaritâ cæruleo-albâ et iridescente. *Hab.* Chatahoochee River, Geo.—*Major Leconte.*

*Unio pernodosus.* Testâ pernodosâ, rotundatâ, subcompressâ; valvulis crassis; natibus elevatis; epidermide luteo-fuscâ; dentibus cardinalibus magnis; lateralibus brevibus, crassis subrectisque; margaritâ albâ. *Hab.* North Carolina.—*B. W. Budd, M.D.*

*Unio atrocostatus.* Testâ plicatâ, subquadratâ, inflatâ; valvulis crassis; natibus prominentibus; epidermide nigrâ, striatâ; dentibus cardinalibus magnis; lateralibus sublongis subrectisque; margaritâ albâ et iridescente. *Hab.* Claiborne, Ala.—*Judge Tait.* Tuscaloosa, Ala.—*B. W. Budd, M.D.* Alexandria, Louis.—*Josiah Hale, M.D.*

*Unio latecostatus.* Testâ crebrè plicatâ, ellipticâ, compressâ; valvulis crassis; natibus prominulis; epidermide tenebroso-fuscâ, valdè striatâ; dentibus cardinalibus magnis; lateralibus longis subrectisque; margaritâ albâ et valdè iridescente. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Unio hippopæus.* Testâ plicatâ, ellipticâ, valdè inflatâ; valvulis subcrassis; natibus prominulis; epidermide luteo-fuscâ, striatâ; dentibus cardinalibus subgrandibus; lateralibus parvis curvisque; margaritâ albâ et iridescente. *Hab.* Lake Erie.—*B. W. Budd, M.D.*

*Unio simplex.* Testâ lævi, ellipticâ, subinflatâ; valvulis subcrassis; natibus subprominentibus; epidermide luteâ; dentibus cardinalibus parvis; lateralibus longis, crassis subrectisque; margaritâ albâ et iridescente. *Hab.* Black Warrior River, Ala.—*B. W. Budd, M.D.*

*Unio unicolor.* Testâ lævi, subrotundâ, subcompressâ; valvulis crassis; natibus subprominentibus; epidermide fuscâ; dentibus cardinalibus parvis; lateralibus longis subrectisque; margaritâ albâ et iridescente. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Unio flavescens.* Testâ lævi, ellipticâ, subinflatâ; valvulis subtenuibus; natibus subprominentibus; epidermide luteo-corneâ, striatâ; dentibus cardinalibus parvis; lateralibus sublongis, subrectisque; margaritâ albâ et iridescente. *Hab.* Black Warrior River, Ala.—*B. W. Budd, M.D.*

*Unio pullescens*. Testâ lævi, ellipticâ, valdè inflatâ; valvulis subcrassis; natibus subprominentibus; epidermide pallido-luteâ; dentibus cardinalibus magnis, compressis erectisque; lateralibus longis curvisque; margaritâ albâ.  
*Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Unio utriculus*. Testâ lævi, ellipticâ, inflatâ; valvulis subcrassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis; lateralibus longis rectisque; margaritâ albâ et valdè iridescente. *Hab.* North Carolina. *B. W. Budd, M.D.*

*Unio spatulatus*. Testâ lævi, ellipticâ, compressâ; valvulis subtenuibus; natibus vix prominulis, ad apicem undulatis; epidermide luteâ, valdè radiatâ; dentibus cardinalibus parvis; lateralibus longis rectisque; margaritâ albâ et iridescente. *Hab.* Rock River, Wisconsin.—*Capt. Marryatt and B. W. Budd, M.D.*

*Unio tumescens*. Testâ lævi, triangulari, inflatâ; valvulis percrassis, natibus magnis elevatisque; epidermide tenebroso-fuscâ, radiatâ; dentibus cardinalibus parvis; lateralibus brevibus, crassis subcurvisque; margaritâ albâ et iridescente. *Hab.* Alexandria, Louis.—*J. Hale, M.D.*

*Unio caperatus*. Testâ lævi, obliquâ, compressâ; valvulis crassis; natibus elevatis; epidermide rufo-fuscâ; dentibus cardinalibus percrassis; lateralibus longis, a cardinalibus separatis, crassis curvisque; margaritâ albâ. *Hab.* Clinch River, Tenn.—*President Estabrook.*

*Unio fulgidus*. Testâ lævi, triangulari, inflatâ; valvulis crassis; natibus magnis elevatisque; epidermide tenebroso-fuscâ, politâ, radiatâ; dentibus cardinalibus parvis; lateralibus crassis rectisque; margaritâ albâ et iridescente. *Hab.* Alexandria, Louis.—*J. Hale, M.D.*

*Unio pulvinulus*. Testâ lævi, ellipticâ, inflatâ; valvulis crassis; natibus prominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus minutissimis; lateralibus brevis rectisque; margaritâ albâ et iridescente. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Unio hyalinus*. Testâ lævi, obovatâ, subinflatâ, diaphanâ; valvulis pertenuibus; natibus prominulis, ad apices undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, compressis; lateralibus longis rectisque; margaritâ cæruleo-albâ et iridescente. *Hab.* Richmond, Va.—*Major Leconte.*

*Unio Estabrookianus*. Testâ lævi, triangulari, valdè compressâ; valvulis crassis; natibus prominulis, compressis, ad apices undulatis; epidermide valdè striatâ, luteo-fuscâ, nitidâ; dentibus cardinalibus compressis; lateralibus brevis crassisque; margaritâ albâ et iridescente. *Hab.* Clinch River and Second Creek, Tenn.—*President Estabrook.*

*Unio approximus*. Testâ lævi, ellipticâ, inflatâ; valvulis subcrassis; natibus prominulis; epidermide luteâ, radiatâ; dentibus cardinalibus parvis, acuminatis; lateralibus longis subrectisque; margaritâ albâ et iridescente. *Hab.* Red River at Alexandria, Lou.—*J. Hale, M.D.*

*Unio symmetricus*. Testâ lævi, oblongâ, subcompressâ, valvulis subcrassis; natibus subprominentibus; epidermide tenebroso-fuscâ; dentibus cardinalibus compressis, elevatis, acuminatis; lateralibus longis lamellatisque; margaritâ albâ. *Hab.* Red River at Alexandria, Lou.—*J. Hale, M.D.*

*Unio fuliginosus*. Testâ lævi, transversâ, subcompressâ; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ; dentibus cardinalibus

parvis; lateralibus longis curvisque; margaritâ vel albâ vel purpureâ. *Hab.* Cobb's Creek, near Philadelphia.—*R. E. Griffith, M.D.*

*Unio caliginosus.* Testâ lævi, ellipticâ, subcompressâ; valvulis subtenuibus; natibus prominulis ad apicem undulatis; epidermide tenebroso-fuscâ; dentibus cardinalibus compressis, elevatis; lateralibus longis subcurvisque; margaritâ albâ et iridescente. *Hab.* Red River, at Alexandria, Louisiana.—*J. Hale, M.D.*

*Unio Binneyi.* Testâ lævi, ellipticâ, valdè compressâ, striatâ; valvulis subtenuibus; natibus prominulis; epidermide tenebroso-fuscâ, nitidâ; dentibus cardinalibus parvis, compressis; lateralibus perlongis subcurvisque; margaritâ cæruleo-albâ et iridescente. *Hab.* Southern States.—*R. E. Griffith, M.D.*

*Unio Gouldii.* Testâ lævi, ellipticâ, subinflatâ, inequilaterali; valvulis subcrassis; natibus prominulis; epidermide tenebroso-fuscâ; dentibus cardinalibus parvis, subcrassis; lateralibus longis curvisque; margaritâ subaureâ et valdè iridescente. *Hab.* Tuscaloosa, Ala.—*R. E. Griffith, M.D.*

*Margaritana minor.* Testâ lævi, triangulari, compressâ; valvulis tenuibus; natibus prominulis, ad apices undulatis; epidermide virido-luteâ; dentibus cardinalibus parvis; margaritâ cæruleo-albâ et iridescente. *Hab.* Tennessee.—*S. M. Edgar, M.D.* North Carolina.—*B. W. Budd, M.D.*

*Anodonta tetragona.* Testâ lævi, oblongâ, valdè inflatâ; valvulis tenuibus; natibus prominulis; epidermide luteo-fuscâ, radiatâ; margaritâ cæruleo-albâ et iridescente. *Hab.* Alexandria, Lou.—*J. Hale, M.D.*

*Melania Buddii.* Testâ striatâ, cylindraceâ, subtenui, corneâ; spirâ attenuatâ; suturis impressis; anfractibus planulatis; aperturâ parvâ, ellipticâ, intus albidâ. *Hab.* Tennessee.—*B. W. Budd, M.D.*

*Melania torta.* Testâ lævi, claviformi, subcrassâ, tenebroso-fuscâ; spirâ obtusâ; suturis impressis; anfractibus convexis; aperturâ grandi, ellipticâ; columellâ tortâ. *Hab.* Big Creek, Lawrence County, Tenn.—*J. Clark.*

*Melania pernodosa.* Testâ tuberculatâ, conoideâ, subcrassâ, corneâ, infernè striatâ; spira elevatâ, ad apicem costatâ; suturis undulatis; anfractibus octonis, planulatis, pernodosis; aperturâ parvâ, ad basim angulatâ et canaliculatâ, intus albidâ. *Hab.* Cyprus Creek, Florence, Ala.—*T. R. Dutton.*

*Melania filum.* Testâ carinatâ, conoideâ, subtenui, tenebroso-corneâ; spirâ elevatâ; suturis impressis; anfractibus planulatis, in medio carinatus; aperturâ parvâ, rhomboideâ; ad basim angulatâ, intus albidâ; columellâ tortâ. *Hab.* Alabama.—*Major Leconte.*

*Melania nobilis.* Testâ tuberculatâ, conoideâ, subcrassâ, luteo-corneâ; spirâ elevatâ; suturis irregulariter undulatis; anfractibus planulatis, in medio tuberculatis; aperturâ subgrandi, productâ, ad basim angulatâ et canaliculatâ, intus luteâ; columellâ tortâ. *Hab.* Alabama.—*Major Leconte.*

*Melania carino-costata.* Testâ plicatâ, carinatâ conoideâ, subtenui, vel luteâ vel castaneâ; spirâ subelevatâ; suturis sulcatis; anfractibus planulatis; aperturâ parvâ, ellipticâ; columellâ lævi. *Hab.* Alabama.—*Major Leconte.* Tennessee.—*B. W. Budd, M.D.*

*Melania abrupta.* Testâ lævi, abbreviato-conoideâ, subcrassâ, luteâ; spirâ abbreviatâ; suturis linearibus; anfractibus septenis, planulatis; aperturâ magnâ, ovatâ, intus albidâ. *Hab.* Alabama.—*Major Leconte.*

*Melania pallescens.* Testâ carinatâ, subacuto-conoideâ, subtenui, luteâ; spirâ subelevatâ; suturis impressis; anfractibus novenis, subconvexis; aperturâ parvâ, ovatâ, ad basim angulatâ, intus albidâ. *Hab.* Chester District, S. C. *Prof. Vanuxem.*

*Melania lugubris.* Testâ levi, subacuto-conoideâ, subcrassâ, tenebroso-fuscâ; spirâ subelevatâ; suturis latè impressis; anfractibus planulatis; aperturâ parvâ; rhomboideâ, intus cæruleâ, infernè angulatâ. *Hab.* Alabama. *Major Leconte.*

*Melania spinalis.* Testâ carinatâ, acuto-conoideâ, subtenui, luteâ, bifasciatâ; spirâ elevatâ; suturis exaratis; anfractibus planulatis; aperturâ parvâ, ovatâ, ad basim angulatâ, intus albidâ. *Hab.* Alabama.—*Major Leconte.*

*Melania spurca.* Testâ lævi, pyramidatâ, subcrassâ, tenebroso-fuscâ; spirâ subelevatâ; suturis subimpressis; anfractibus octonis, planulatis; aperturâ parvâ, rhomboideâ, ad basim angulatâ, intus albidâ. *Hab.* Alabama.—*Major Leconte.*

*Melania harpa.* Testâ striatâ, conoideâ, subcrassâ, corneâ; spirâ subelevatâ; suturis subimpressis; anfractibus subconvexis; aperturâ parvâ, ellipticâ, ad basim angulatâ, intus albidâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Melania basalis.* Testâ lævi, ellipticâ, subcrassâ, luteo-viridi, fasciatâ; spirâ curtâ, obtusâ; suturis impressis; anfractibus convexis; aperturâ ovato-elongatâ, ad basim acuto-angulatâ, intus albida. *Hab.* Alabama.—*Major Leconte.*

*Melania auriculæformis.* Testâ lævi, ellipticâ, subtenui, luteâ; spirâ depressâ; suturis impressis; anfractibus senis, subconvexis; aperturâ elongatâ, contractâ, ad basim rotundatâ, intus albidâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Melania pumila.* Testâ lævi, obtuso-conoideâ, subcrassâ, tenebroso-corneâ; spirâ depressâ; suturis valdè impressis; anfractibus subconvexis; aperturâ elongatâ, contractâ, ad basim contortâ, intus albidâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Melania protea.* Testâ lævi, subcylindraceâ, crassâ, pupæformis, luteo-corneâ; spirâ elevatâ; suturis impressis; anfractibus septenis, subconvexis; aperturâ parvâ, rhomboideâ, ad basim angulatâ, intus albidâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Melania arctata.* Testâ striatâ, coarctatâ, crassâ, luteo-corneâ; spirâ conoideâ; suturis valdè impressis; anfractibus senis, planulatis; aperturâ parvâ, rhomboideâ, intus albidâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Melania solida.* Testâ lævi, obtuso-conicâ, crassâ, solidâ, tenebroso-corneâ; spirâ subbrevis; suturis valdè impressis; anfractibus convexis; aperturâ parvâ, rhomboideâ, ad basim contortâ, intus albâ; columellâ inflectâ. *Hab.* Tennessee.—*E. Foreman, M.D.*

*Melania crebristriata.* Testâ transversè et crebrissimè striatâ, subfusiformi, crassâ, luteo-corneâ; spirâ obtusâ, suturis impressis; anfractibus subconvexis; aperturâ parvâ, subovatâ, ad basim angulatâ, intus albidâ; columellâ inflectâ, supernè incrassatâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Melania modesta.* Testâ lævi, conoideâ, subfusiformi, subtenui, nigrâ; spirâ subelevatâ; suturis linearibus; anfractibus planulatis, ultimo in medio angu-

lato; aperturâ ellipticâ, subgrandi, intus tenebrosâ. *Hab.* Chatahoochee River, at Columbus, Geo. *Dr. Boykin.*

*Melania Haleiana.* Testâ lævi, acuto-conoideâ, subtenui, luteo-corneâ, politâ; spirâ elevatâ; suturis impressis; anfractibus novenis, convexis; aperturâ parvâ, ovatâ, ad basim subangulatâ, intus albidâ. *Hab.* Alexandria, Lou. *J. Hale, M.D.*

*Melania Alexandrensis.* Testâ lævi, subacuto-conoideâ, subtenui, tenebroso-corneâ; spirâ subelevatâ; suturis subimpressis; anfractibus subplanulatis; aperturâ parvâ, subtrapezoideâ, intus albidâ. *Hab.* Alexandria, Lou.—*J. Hale, M.D.*

*Melania ovoidea.* Testâ lævi, ellipticâ, subcrassâ, corneâ; spirâ brevi; suturis vix impressis; anfractibus senis, subconvexis; aperturâ magnâ, subovatâ, intus albidâ. *Hab.* Alexandria, Lou.—*J. Hale, M.D.*

*Anculosa squalida.* Testâ lævi, vel rotundâ vel ellipticâ, percrassâ, tenebroso-corneâ; spirâ obtusâ; suturis vix impressis; aperturâ magnâ, subrotundâ, intus albidâ; columellâ percrassâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Anculosa tintinnabulum.* Testâ lævi, obtuso-conicâ, campanulatâ, fasciatâ, percrassâ, luteâ; spirâ brevi; suturis impressis; anfractibus quinis, impressis; aperturâ rotundâ, subgrandi; columellâ percrassâ, supernè callosâ. *Hab.* Tennessee.—*E. Foreman, M.D.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Schizostoma pagoda.* Testâ carinatâ, conicâ, subcrassâ, tenebroso-corneâ; spirâ subobtusâ; suturis valdè impressis; anfractibus senis; fissurâ parvâ; aperturâ ellipticâ, intus albidâ; columellâ lævi. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Schizostoma Buddii.* Testâ striatâ, subfusiformi, crassâ, tenebroso-corneâ; spirâ obtuso-conicâ; suturis irregulariter impressis; anfractibus senis, subinflatis; fissurâ parvâ, obliquâ; aperturâ magnâ, rhomboideâ, intus albidâ; columellâ supernè callosâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Schizostoma Babylonicum.* Testâ striatâ, subfusiformi, subcrassâ, castaneâ; spirâ obtuso-conicâ; suturis impressis; anfractibus planulatis; fissurâ parvâ; aperturâ magnâ, ellipticâ, intus subcorneâ; columellâ lævi, ad basim angulatâ, supernè incrassatâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Schizostoma constrictum.* Testâ lævi, subfusiformi, subtenui, luteo-corneâ; spirâ obtusâ; suturis impressis; anfractibus coarctatis; fissurâ submagnâ, subobliquâ; aperturâ magnâ, ellipticâ, intus albidâ; columellâ lævi, ad basim subangulatâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Schizostoma laciniatum.* Testâ lævi, obtuso-conicâ, subcrassâ, fasciatâ, luteo-corneâ; spirâ obtusâ, suturis exaratis; anfractibus convexis; fissurâ profundâ; aperturâ ellipticâ, intus albidâ; columellâ lævi, supernè incrassatâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Schizostoma funiculatum.* Testâ striatâ, ellipticâ, subcrassâ, castaneâ; spirâ obtusâ; suturis valdè impressis; anfractibus convexis; fissurâ submagnâ, obliquâ; aperturâ magnâ, ellipticâ; columellâ supernè callosâ. *Hab.* Tuscaloosa, Ala.—*B. W. Budd, M.D.*

*Paludina Halciana.* Testâ lævi, ventricoso-conoideâ, subtenui, rufo-corneâ, imperforatâ; spirâ brevi; suturis valdè impressis; anfractibus quaternis, sub-

convexis; aperturâ magnâ, subrotundatâ, cœruleâ. *Hab.* Alexandria, Lou.—  
*J. Hale, M.D.*

On motion of Prof. Frazer, Prof. Haldeman was authorized to withdraw his paper, entitled, "Observations on General Phonology and Alphabetical Notation, &c." read to the Society 1st November, 1844; and the Committee thereon was discharged.

The death of Mr. John Guillemand, of Oxford, a member of this Society, was announced.

Major Bache laid on the table, for examination by the members, a map of Sandy Hook, received by him, during the course of the last winter, from Professor Bache, superintendent of the Coast Survey, exhibiting the increase of that headland from the earliest surveys.

The first survey is by Lieut. John Hill, in 1778. The next was made in 1779, by Des Barres, a name of high authority. Then follows the survey of Capt. John Le Conte, U. S. Assistant Topographical Engineer, of 1819, which is succeeded by that of the Coast Survey of 1836. The survey next in order of time, is that executed by himself in 1842; and finally, a second survey by the Coast Survey, made in 1844. A comparison of the shore lines of these surveys, omitting Hill's survey, which, from the absence of a general resemblance found between all those of a subsequent date, is not considered accurate, shows a great increase of that headland northerly. This increase, measured between parallels of latitude, is as follows:—

From 1779 to 1819, 40 years, 540 feet, or 13.5 feet per year.

From 1819 to 1836, 17 years, 1150 feet, or 67.6 feet per year.

From 1836 to 1842, 6 years, 630 feet, or 105 feet per year.

From 1842 to 1844, 2 years, 200 feet, or 100 feet per year.

Besides this northerly elongation, the increase in elevation will, on an examination of the soundings at the point of the Hook, appear quite as remarkable. While the Coast Survey of 1836 gives depths of 40 and 102 feet at low water, his survey of 1842, and the Coast Survey of 1844, show fast land at the same points respectively. It would likewise appear by a comparison of the best surveys, that while Sandy Hook is thus making out, Flynn's Knoll, on the other side of the main ship channel, stands fast; thus contracting the width



of the channel, the depth of which does not seem to have materially changed.

The cause of the extraordinary increase at the extremity of this headland, is attributed by some to the general prevalence of the south-east winds on that part of the coast. It is supposed that these winds, striking the shore obliquely in the direction of the point of the Hook, carry up the slope the sand, which, returning by gravitation on the shortest line to the sea, is again thrown up; and thus, by successive efforts, is deposited at the point in question. If this be the true explanation of the increase, it is fair to conclude, as the materials are furnished from the sea along the shore line, which here trends for many miles in the same direction, that, whenever this line is cut across, as it is at times by the opening of Shrewsbury Inlet, this increase would be correspondingly diminished; the deposit being made at the Inlet of the particles, which would otherwise be carried forward to the extremity of the Hook. On the other hand, it is not unreasonable to suppose that the Shrewsbury River, when open directly to the sea, is itself a fruitful source, under the operation just explained, from which the deposit is derived. The truth or error of either of these opinions, or of the theory of the progress of the sands northerly, under the influence of the south-east winds, can probably only be proved by frequent surveys showing the increase, in connexion with exact records of the time of the opening and shutting of the inlet in question.

The Treasurer laid before the Society an account presented by Mr. Frederick Brown, on the part of the executors of the late Mr. Dunn, which, on motion, was referred to a Committee, consisting of Mr. Thos. I. Wharton, Mr. Williams; and Mr. Kane, to report thereon.

On motion of Dr. Patterson, the request of Mr. Wilde, that a plaster cast might be made from the Society's bust of Franklin, by Houdon, was granted, with the understanding that it should be done in the Society's Hall, under the inspection of the Librarian.